

# MatrixRTK, an Intelligent RTK System

MatrixRTK is a new generation GNSS RTK system. With high-performance multi-constellation and multi-frequency GNSS board inside, MatrixRTK can provide high accuracy and stability signal reception. Working with the choke ring antenna, MatrixRTK can improve the capability of anti-jamming and output high-quality RTK corrections, which is a ideal solution for CORS station.

The built-in large capacity battery can support up to 24 hours field work. The rugged housing protects the equipment from harsh environments. And accessing remotely makes it easy for remote operation.

## Key Features:

- 220 Channels, supports multi constellations & frequencies
  - GPS: L1C/A, L1C, L2C, L2E, L5
  - GLONASS: L1C/A, L1P, L2C/A, L2P
  - BDS: B1, B2
  - GALILEO: E1 BOC, E5A, E5B, E5AltBOC
  - SBAS: L1C/A, L5
- Supports 64GB internal storage and up to 1TB external SD card
- Rapid RTK integer ambiguity resolution
- Supports stable high-precision measurements output
- Controller and software make host system start convenient
- Supports 3G, Wi-Fi and external radio, etc.
- Supports accessing remotely, easy for remote operation.





# Technical Specifications

## Performance Specifications

- **Static GNSS surveying**
  - High-Precision Static
    - Horizontal..... 3 mm + 0.1 ppm RMS
    - Vertical ..... 3.5 mm + 0.4 ppm RMS
  - Static and Fast Static
    - Horizontal..... 3 mm + 0.5 ppm RMS
    - Vertical ..... 5 mm + 0.5 ppm RMS
- **RTK Positioning Accuracy**
  - Horizontal..... 8mm + 1ppm RMS
  - Vertical ..... 15mm + 1ppm RMS
- **Post-processed Kinematic (PPK) surveying**
  - Horizontal..... 8 mm+1ppm RMS
  - Vertical ..... 15 mm+1ppm RMS
- **Network RTK**
  - Horizontal..... 8 mm + 0.5 ppm RMS
  - Vertical..... 15 mm + 0.5 ppm RMS
- Carrier phase measurements precision ..... <1 mm
- SBAS Positioning Accuracy..... 0.5m
- Initialization(typical)..... <10s
- Initialization Reliability..... >99.9%
- Data Rate ..... up to 20Hz
- RTK format..... CMR, CMR+, sCMRx,  
RTCM2.X/3.X
- Operation System..... Linux
- Data Storage..... 64GB internal storage  
Up to 1TB external SD card.

## Communication

- 4G.....TD-LTE, FDD-LTE, TD-SCDMA, WCDMA, GPRS, GSM
- Wi-Fi ..... 802.11b/g
- USB..... USB 2.0 x2
- Serial port.....RS-232 x3, RS485/RS422 x1
- Ethernet .....10/100M BASE-T x1
- External Radio Station (Optional)
  - Power..... 5W/10W/20W/30W
  - Frequency..... 450MHz-470MHz
  - Distance (typical) ..... 15km

## Physical Characteristics

- Battery (Lithium).....12500mAh/7.4V x1  
Supports up to 24 hours working
- Input Voltage..... 7~36VDC  
With over-discharge protection
- Power Consumption (typical)..... < 4 W
- Size.....147.6mm\*64.3mm\*246.0mm
- Weight..... 2.5kg including battery
- Material..... Magnesium alloy
- Dust & Water Proof ..... IP67
- Free Drop onto Concrete..... 1 m
- Operating Temperature..... -40°C ~ +75°C
- Storage Temperature..... -40°C ~ +80°C
- Relative Humidity..... 100% not condensed

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